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PTO/SB/05 (05-03)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No. 8540G-000183 (GP-303087)

First Inventor Robert L. Fuss

Title VARIABLE CATALYST LOADING BASED ON FLOW FIELD GEOMETRY

Express Mail Label No. EL623599592US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

- Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- Applicant claims small entity status.
See 37 CFR 1.27.
- Specification [Total Pages 32]
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (*if filed*)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- Drawing(s) (35 U.S.C. 113) [Total Sheets 12]
- Oath or Declaration [Total Pages 3]
 - a. Newly executed (original or copy)
 - b. Copy from a prior application (37 CFR 1.63 (d))
(for a continuation/divisional with Box 18 completed)
 - i. **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
- Application Data Sheet. See 37 CFR 1.76

ADDRESS TO:

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

7. CD-ROM or CD-R in duplicate, large table or Computer Program (*Appendix*)
8. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
 - a. Computer Readable Form (CRF)
 - b. Specification Sequence Listing on:
 - i. CD-ROM or CD-R (2 copies); or
 - ii. paper
 - c. Statements verifying identity of above copies

ACCOMPANYING APPLICATIONS PARTS

9. Assignment Papers (cover sheet & document(s))
10. 37 C.F.R. §3.73(b) Statement Power of Attorney
(when there is an assignee)
11. English Translation Document (*if applicable*)
12. Information Disclosure Statement (IDS)/PTO-1449 Copies of IDS Citations
13. Preliminary Amendment
14. Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. Request and Non Publication under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. Other: Petition to Accept Color Drawings

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

Continuation Divisional Continuation-in-part (CIP)
Prior application information: Examiner _____ of prior application No. _____ / _____
Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

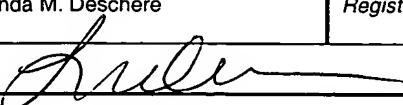
Customer Number or Bar Code Label

27572

or Correspondence address below

(Insert Customer No. or Attach bar code label here)

Name	Harness, Dickey & Pierce, P.L.C.				
Address	P.O. Box 828				
City	Bloomfield Hills	State	MI	Zip Code	48303
Country	United States of America	Telephone	248-641-1600		Fax 248-641-0270

Name (Print/Type)	Linda M. Deschere	Registration No. (Attorney/Agent)	34,811
Signature			Date 3/10/03

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U.S.P.T.O.



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FEE TRANSMITTAL for FY 2004

Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 1220

Complete if Known

Application Number	8540G-000183 (GP-303087)
Filing Date	
First Named Inventor	Robert L. Fuss
Examiner Name	
Art Unit	
Attorney Docket No.	8540G-000183 (GP-303087)

METHOD OF PAYMENT (check all that apply)

 Check Credit card Money Other None Order
 Deposit Account:

Deposit Account Number

07-0960

Deposit Account Name

General Motors Corporation

The Director is authorized to: (check all that apply)

-
- Charge fee(s) indicated below
-
- Credit any overpayments
-
- Charge any additional fee(s) during the pendency of this application
-
- Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code	Fee Code	Fee (\$)	Fee (\$)
1001	2001	770	770
1002	2002	340	
1003	2003	530	
1004	2004	770	
1005	2005	160	
SUBTOTAL (1)			(\$ 770)

2. EXTRA CLAIM FEES

Total Claims	-20 **	=	Extra Claims	X	Fee from below	=	Fee Paid
Independent Claims	26		6	X	18	=	108
Multiple Dependent	5	-3 **	2	X	86	=	172
				X		=	0

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)				(\$ 280)

**or number previously paid, if greater; For Reissues, see above

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code	Fee Code	Fee (\$)	Fee (\$)
1051	2051	130	65
1052	2052	50	25
1053	1053	130	Surcharge - late filing fee or oath
1812	1812	2,520	Surcharge - late provisional filing fee or cover sheet.
1804	1804	920*	Non-English specification
1805	1805	1,840*	For filing a request for reexamination
1251	2251	110	Requesting publication of SIR prior to Examiner action
1252	2252	420	Requesting publication of SIR after Examiner action
1253	2253	950	Extension for reply within first month
1254	2254	1,480	Extension for reply within second month
1255	2255	2,010	Extension for reply within third month
1401	2401	330	Extension for reply within fourth month
1402	2402	330	Notice of Appeal
1403	2403	290	Filing a brief in support of an appeal
1451	1451	1,510	Request for oral hearing
1452	2452	110	Petition to institute a public use proceeding
1453	2453	1,330	Petition to revive – unavoidable
1501	2501	1,330	Petition to revive – unintentional
1502	2502	480	Utility issue fee (or reissue)
1503	2503	640	Design issue fee
1460	1460	130	Plant issue fee
1807	1807	50	Petitions to the Commissioner
1806	1806	180	Processing fee under 37 CFR 1.17 (q)
8021	8021	40	Submission of Information Disclosure Stmt
1809	2809	770	Recording each patent assignment per property (times number of properties)
1810	2810	770	40
1801	2801	770	Filing a submission after final rejection (37 CFR § 1.129(a))
1802	1802	900	For each additional invention to be examined (37 CFR § 1.129(b))
1803	2803	770	Request for Continued Examination (RCE)
1804	1804	900	Request for expedited examination of a design application
Other fee (specify) Petition to Accept Color Drawings			130

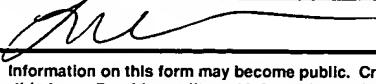
*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 170)

SUBMITTED BY

Complete if applicable

Name (Print/Type)	Linda M. Deschere	Registration No. Attorney/Agent)	34,811	Telephone	248-641-1600
Signature			Date	3 NOV 03	

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: Not yet assigned

Filing Date: Herewith

Applicant: Robert L. Fuss et al.

Group Art Unit: Not yet assigned

Examiner: Not yet assigned

Title: VARIABLE CATALYST LOADING BASED ON FLOW FIELD GEOMETRY

Attorney Docket: 8540G-000183 (GP-303087)

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO ACCEPT COLOR DRAWINGS

Sir:

The above-referenced invention is directed to a variable catalyst loading based on a flow field geometry for a fuel cell, as well as a method of controlling reactions in a fuel cell. In order to determine the localized areas of the electrode that require a variable catalyst loading based on the bipolar plate material and flow field geometry, the anode and cathode flow field plates of the bipolar plate are electrically separated from one another with an array of resistors between such anode and cathode flow field plates. Then, the distribution of the current leaving an entire fuel cell is determinable by the array of resistors across the entire cross-sectional area of the cell. Given the resistance of each resistor being a known value, the current passing through a

particular resistor is determined by measuring the voltage drop across such resistor. In this manner, the current produced by a membrane electrode assembly (MEA) is determined as a function of position, by measuring the voltage drops across each resistor in the array. In other words, current as a function of position across the MEA, is monitored.

Examples where the current distribution of an electrode was measured are depicted in Figures 11A and 11B. Hot spots, that is areas of increased electrochemical activity and current density, and cool spots can be seen throughout each of the figures. As seen in the figures, however, there are varying levels of current density throughout the surface of the figures and, in order for one skilled in the art to fully appreciate and acknowledge the effects of the present invention, color drawings are required. As such, in accordance with 37 C.F.R. § 1.84(2), the fee set forth in § 1.17(h); three (3) sets of color drawings; and a black and white photocopy that accurately depicts, to the extent possible, the subject matter shown in the color drawing are submitted herewith.

Favorable consideration of this petition is respectfully requested.

Respectfully submitted,

Date: 3 Nov 03

By:


Linda M. Deschere
Reg. No. 34,811

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